USTAR Annual Rpt to EAC
October 2013

USTAR Governing Authority

www.innovationutah.com/

For information contact:
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Agenda for EAC:

- Topic 1: State and National Context for USTAR
- Topic 2: USTAR Legislative Reporting Requirements
- Topic 3: Discussion / Q and A
- Topic 4: Appendix Details

USTAR is a Visionary Joint Venture

1. Strengthen and Grow Existing Utah Businesses, Both Urban and Rural
2. Increase Innovation, Entrepreneurship & Investment
3. Increase National and International Business
4. Prioritize Education to Develop the Workforce of the Future




6 Elements of an Innovation EcoSystem

Leading 21st Century Economic Development Organizations know how to intervene at the margins of private sector investment flows of capital (financial and intellectual) to:

- Address economic transition
- Capture the benefit of investments in research and development, higher education (leverage higher education assets)
- Build entrepreneurial cultures and develop innovation capacity (sustain capital formation and access)
- Help existing industries modernize and become more productive (create a talent advantage, strength the competitiveness of existing industries)
- Diversify both rural and urban economies
- Develop global innovation network (promote global exports)

Source: NGA, May13 Rpt

How does USTAR apply these principles to the State of Utah's integrated economic development plan in FY14?

USTAR Infrastructure for Industry Collaboration

Research & Technology Development

Logan (USU) 154,000 sf
BioInnovations Center

Salt Lake (U of U)
208,000 sf
Sorenson Building

Support Programs

25,000 sf BioInnovations Gateway incubator (BiG) for Life Science companies in SLC at Granite Technical Institute

SBIR-STTR Assistance Center, SSAC in Sandy at the 30,000 sf SLCC Miller Business Resource Center

USTAR North

- **Weber State's, 22,000 sf Utah Center for Advanced Innovation and Design (UCAID) serving Aerospace and Outdoor products companies**

USTAR Central

- **Utah Valley University's 25,000 sf incubator in Orem www.uvu.edu/brc/**

USTAR EAST

- **USU's 70,000 sf Bingham Research Center BEERC in Vernal**
- **USU's 55,848 sf Carbon Energy Innovation Center in Price**

USTAR South

- **Cedar City (SUU)**
- **St. George (DSU) SEED Dixie and the 8,000 sf ITRE Incubator**

Utah Science Technology and Research (USTAR)

USTAR Research Team Funding

Technology Outreach Program

USTAR Buildings & Infrastructure

USTAR Summary for EAC:

- Program 1: USTAR has proven that it can recruit "Star Faculty". The USTAR faculty are true catalysts, winning grants and enabling technology commercialization at a higher rate than traditional faculty.
- Program 2: USTAR buildings are both LEED Gold Certified and are beginning to act as industry magnets. We expect industry-sponsored research to accelerate.
- Program 3:
  - USTAR Outreach teams are delivering impressive results and leading the innovation-based economic development initiatives for their respective regions.
  - Weber State University, Utah Valley University and Dixie State University have incorporated USTAR Outreach Directors into their leadership teams.
  - Each region has an "incubation" facility acting as the "place" for entrepreneurs to collaborate w industry

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USTAR Reporting Requirements

63m-2-302-4

The Governing Authority Shall report to the Business, Economic Development, and Labor Appropriations Subcommittee and to the Legislative Executive Appropriations Committee by November 1 including:

(a) the achievement of the objectives and duties provided under this part;
(b) its annual expenditure of funds; and
(c) nonlapsing balance retained by the governing authority

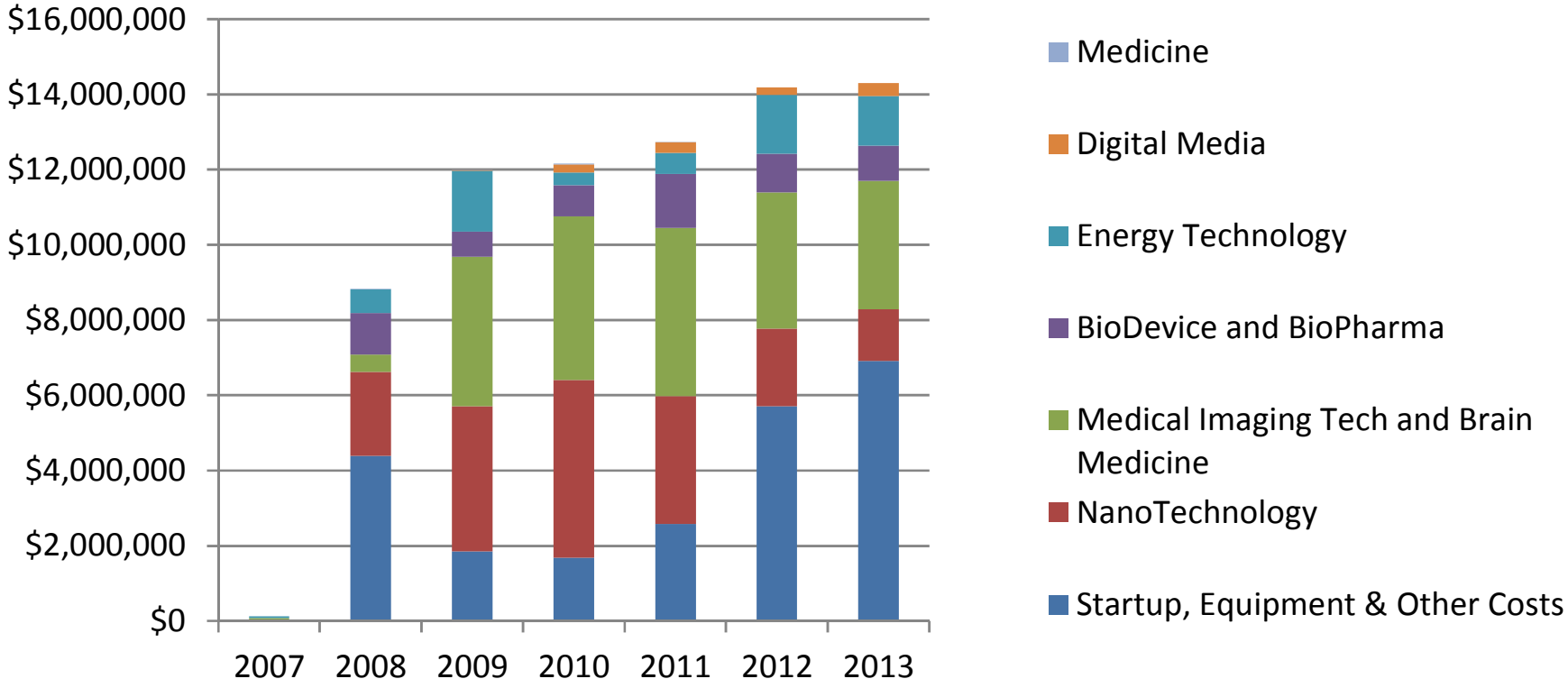
USTAR Legislative Intent 2013 GS - SB3

Additionally, requirements made in *2013 GS SB2 Item 63* are included within this report, where applicable, and in the appendix to this report.

1) **Specific program level performance**
2) **Detailed team expenditures at each university**
3) **Non-lapsing balance and planned use**
4) **Federal grants awarded to each university**
5) **Private equity investment**
6) **Other forms of funding received by USTAR**

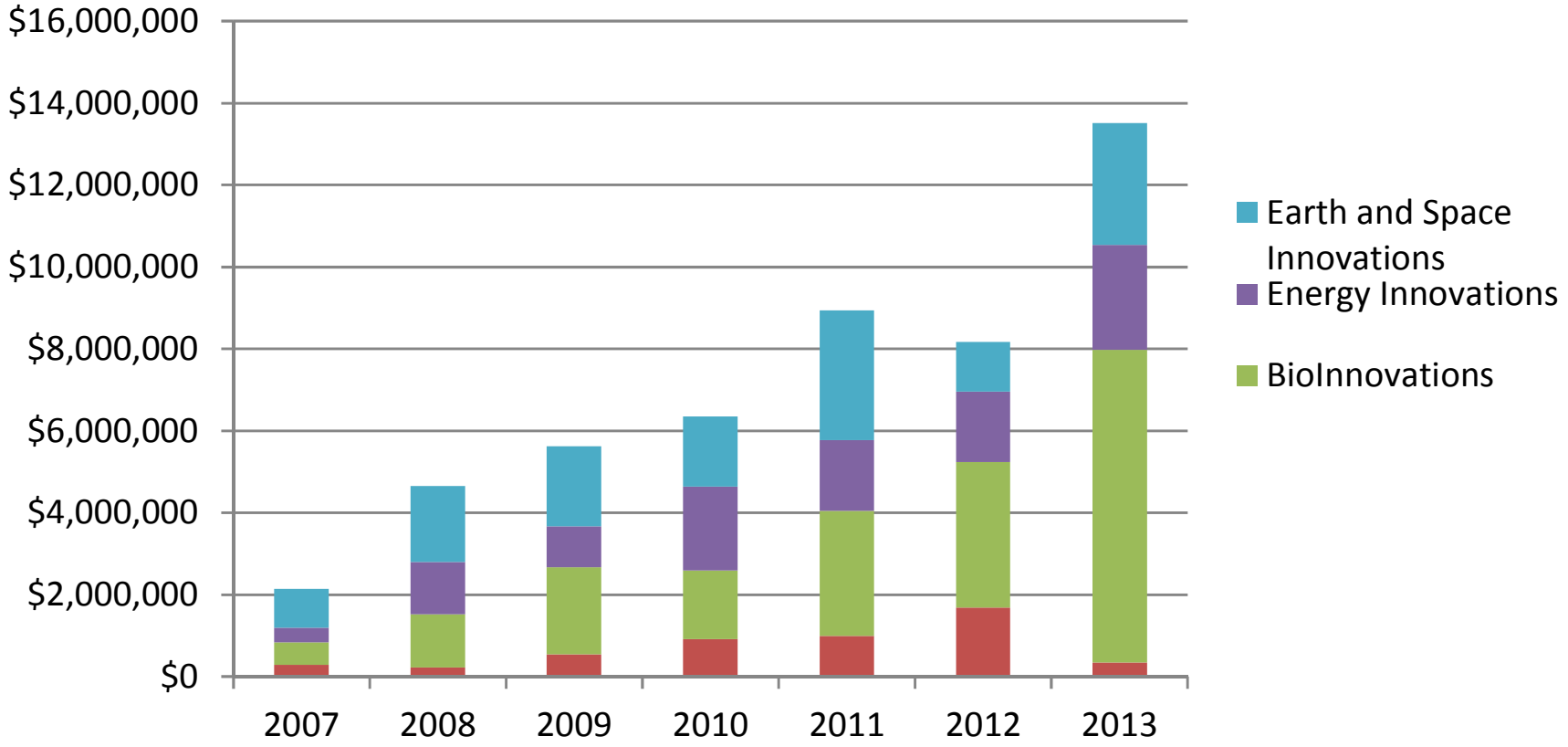
Program 1: Research Teams

University of Utah USTAR Research Teams General Fund Expenditures - By Fiscal Year

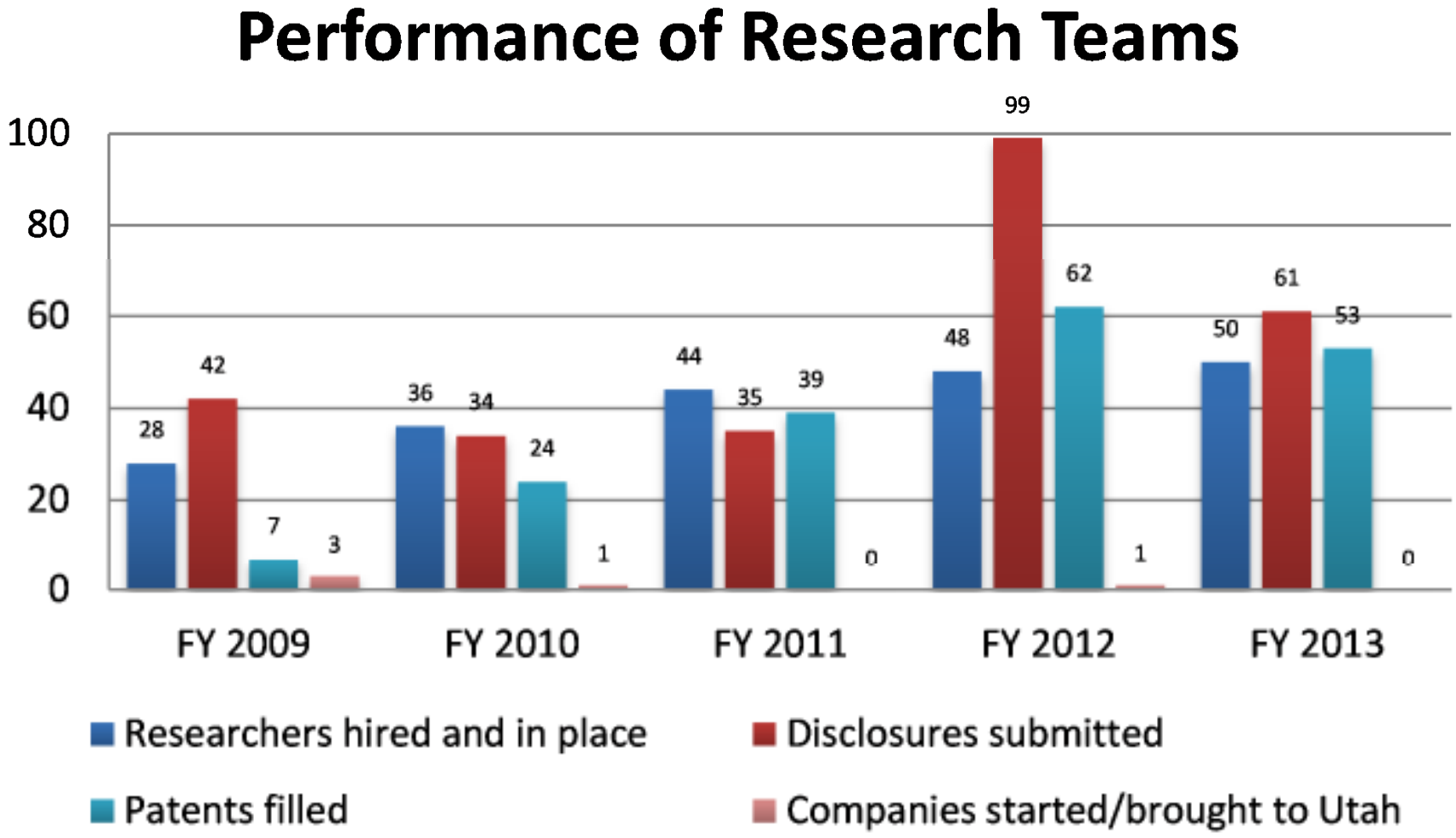


Program 1: Research Teams (cont)

Utah State University USTAR Research Teams
General Fund Expenditures - By Fiscal Year



Program 1: Research Teams (cont)



Program 1: Research Teams (cont)

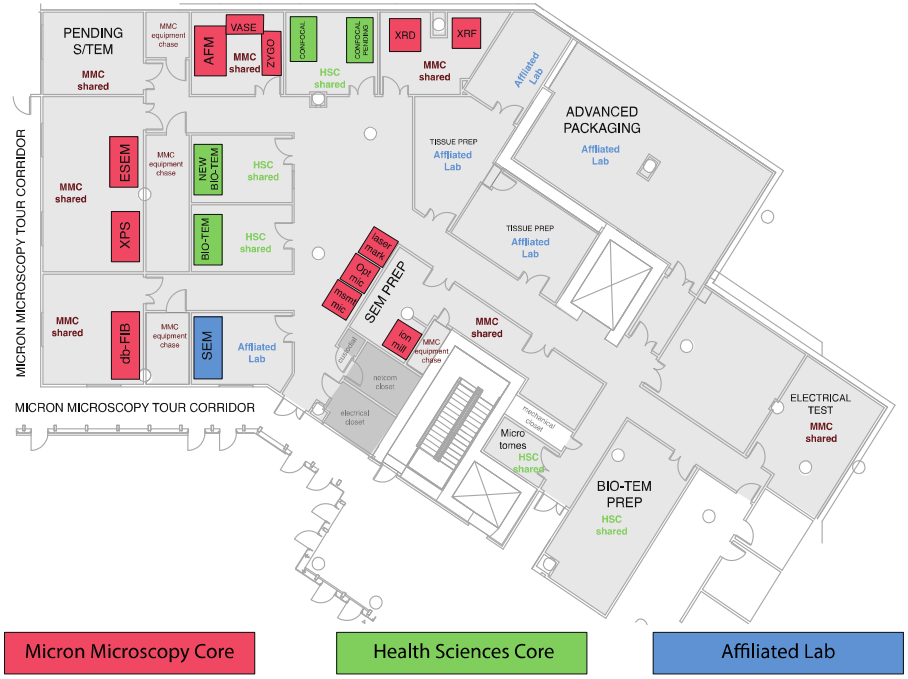
UofU and USU Federal Grants Comparison		
	U of U	**USU***
Total Operating Expenses	$74,323,310	$49,383,776
Operating Expenses as a percent of total	60.1%	39.9%
Total Anticipated & Awarded Federal Grants	$72,561,600	$58,842,859
Grants Anticipated & Awarded / Op Expense	98%	119%
Number of Researchers	35	15
Dollars per Researcher	$2,073,189	$3,922,857
Current Proposals Pending	$42,632,435	$65,912,565
Current Proposals Per Researcher	$1,218,070	$4,394,171

UofU and USU Non-Federal Sponsored Research Comparison		
	U of U	**USU***
Total Anticipated & Awarded Sponsored Research	$27,776,091	
Total Anticipated & Awarded Private Investment		$131,975,000**
Total Anticipated & Awarded Engineering Contracts		$168,545,000**

* USU has USTAR Researchers and affiliate researchers included in metrics

** USU includes projects partnered with USTAR, but not sourced from USTAR Teams

Program 2 at U of U: James L. Sorenson Molecular Biotechnology Building _A USTAR Innovation Center



State of the art elements in this LEED Gold certified 208,000 sf facility

- **18,000 sf Nanofabrication core**
- **5,300 sf Microscopy suite**
- **Small-animal imaging facility**
- **4 floors of Research Labs**

Program 2: USU Facilities and Infrastructure

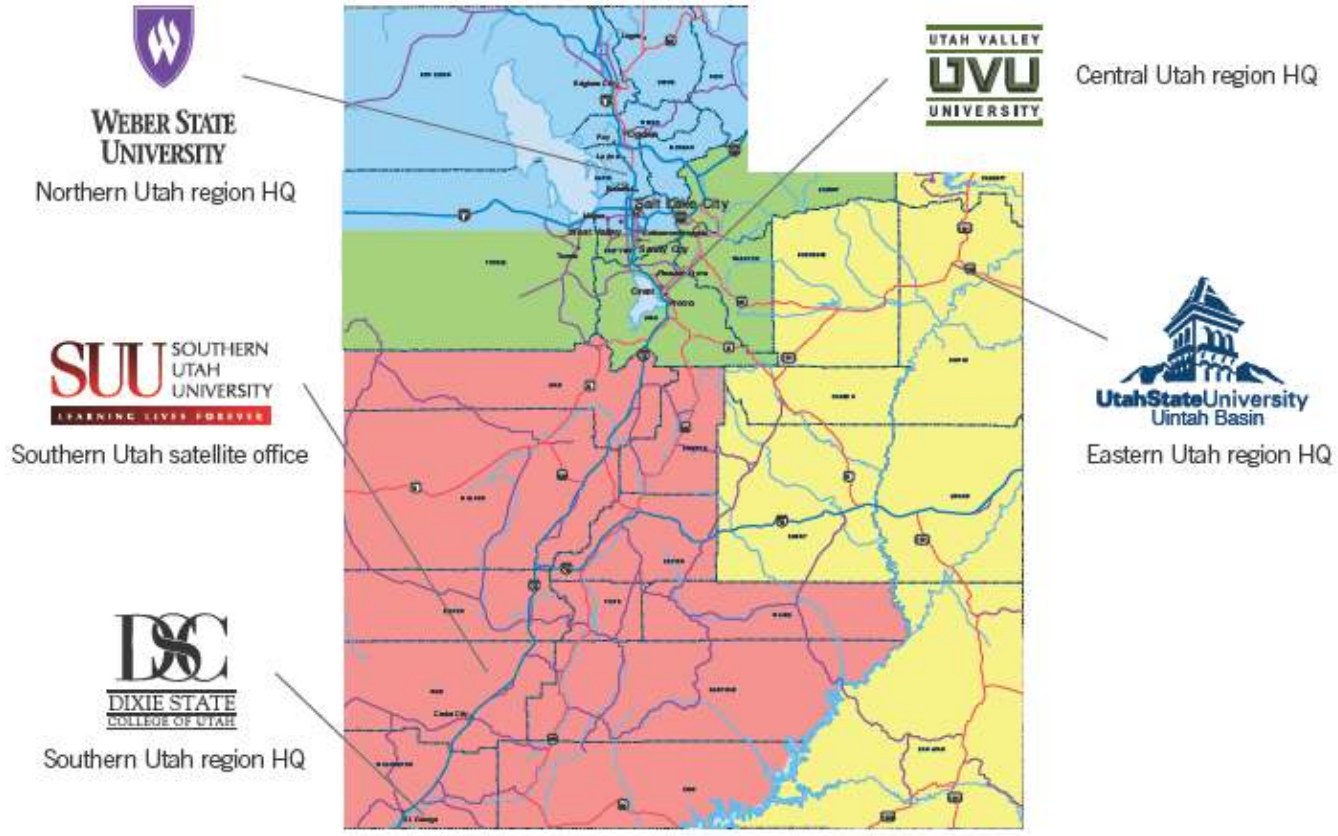
USU USTAR Core Facilities

- **Clinical nutrition center**
- **Bio Safety Level 3**
- **Specialized Life science labs**
- **LEED Gold Certified for sustainable design**

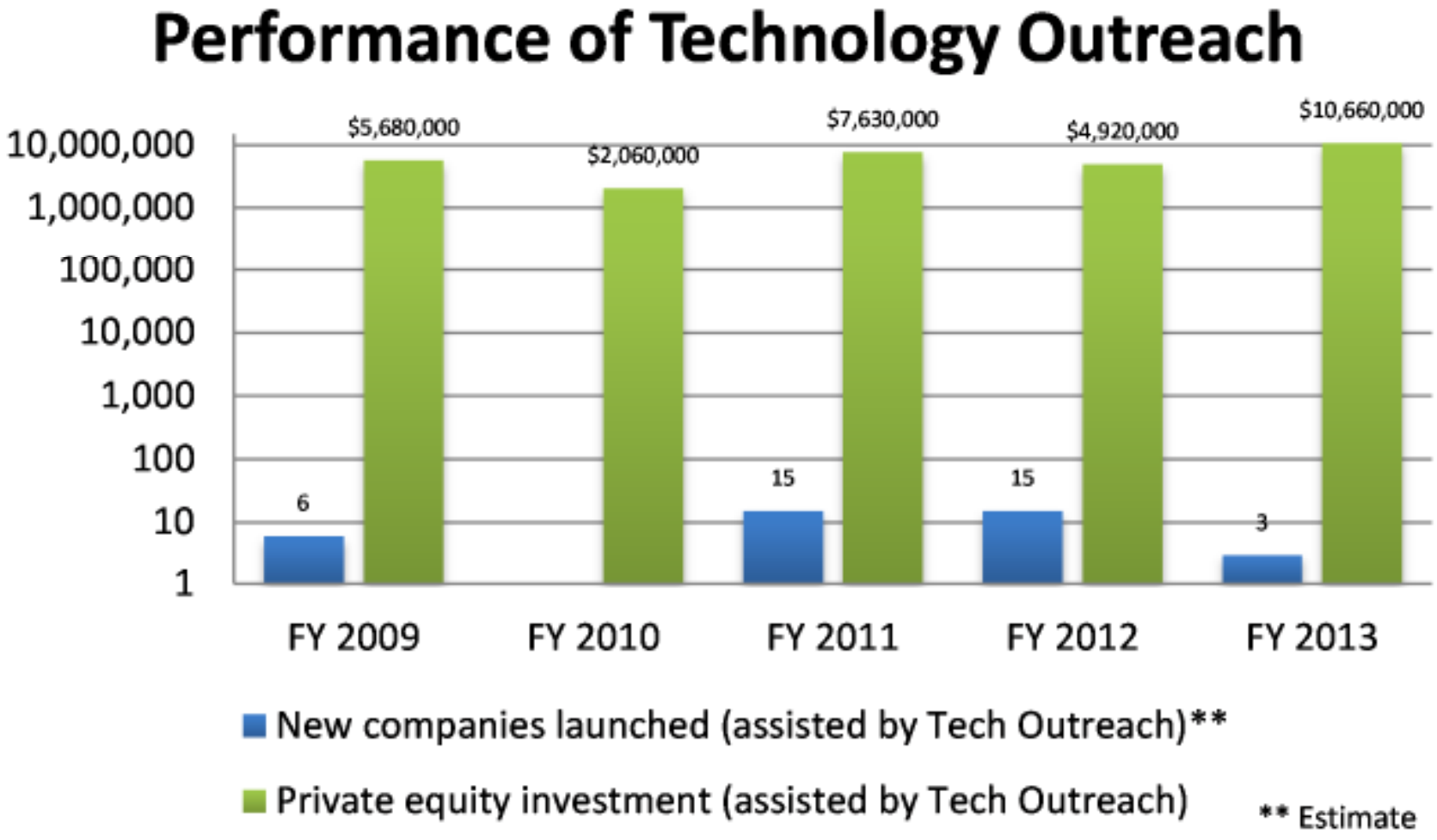
USU BEERC and USU CEIC:

Rural Service Centers (primarily private investment)

Program 3: Outreach Areas

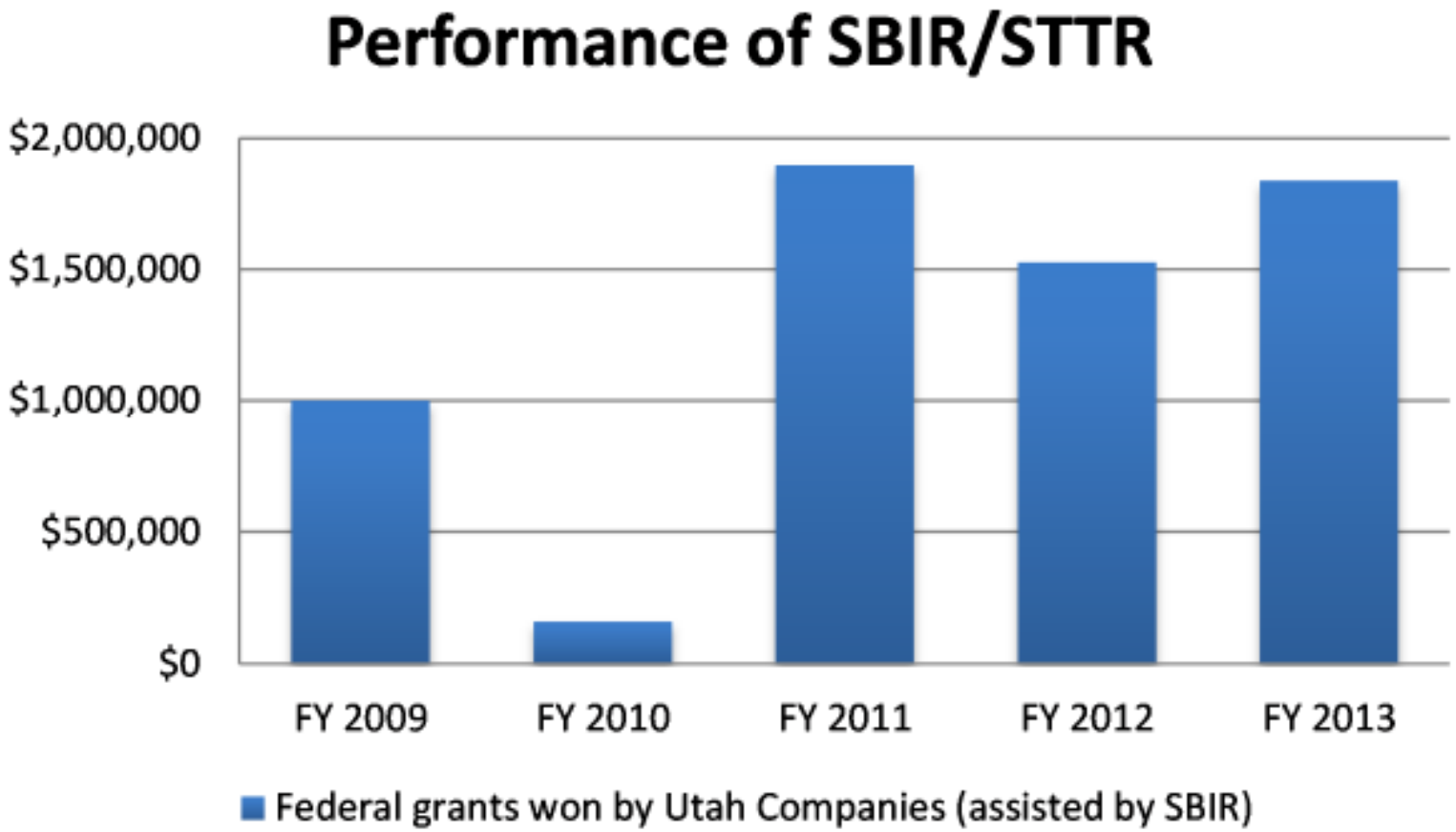


USTAR Program 3:



Program 3: Commercialization Funding

SBIR/STTR Program Highlight

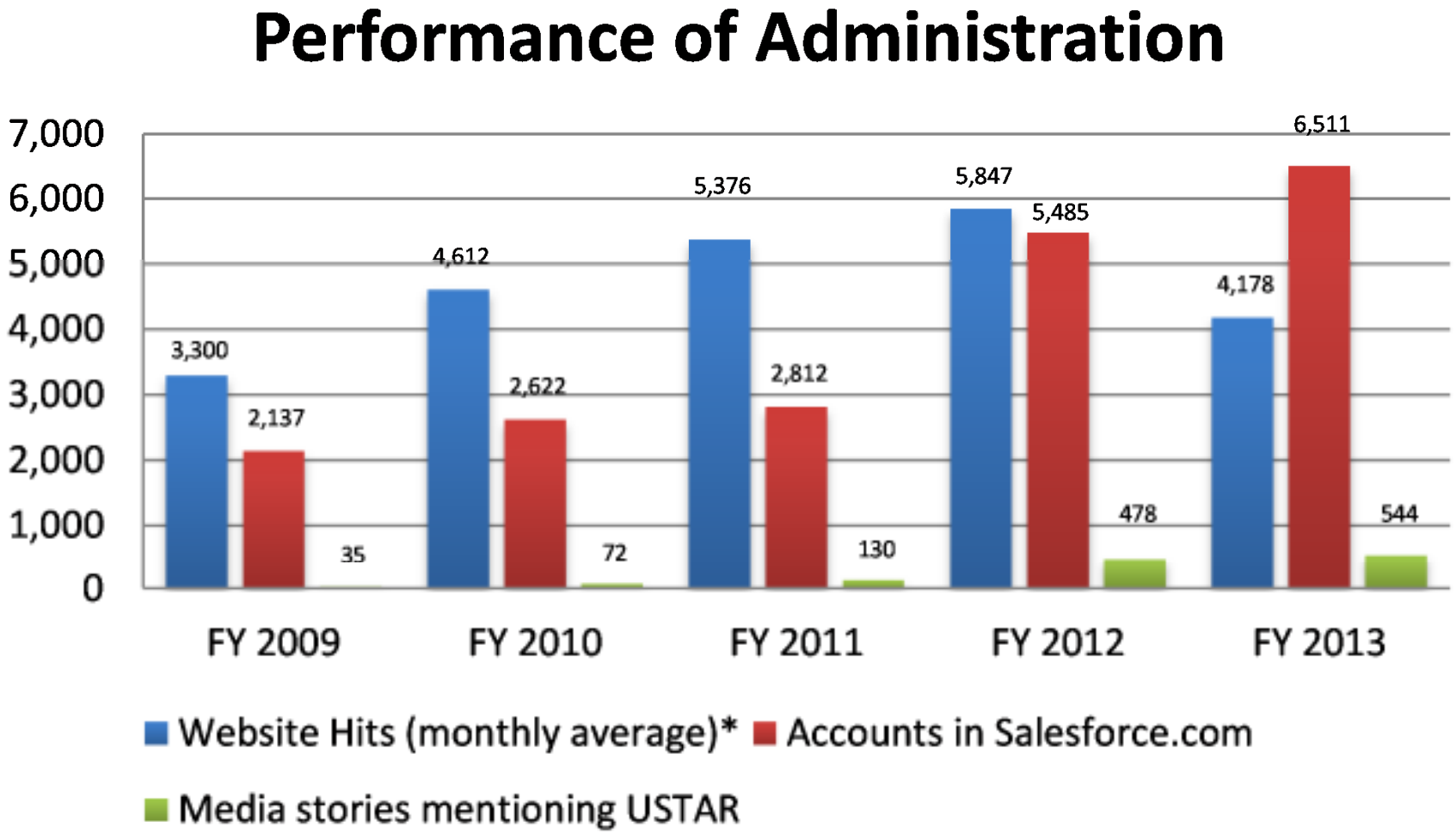


Program 3: UVU GTM Seed Capital Initiative

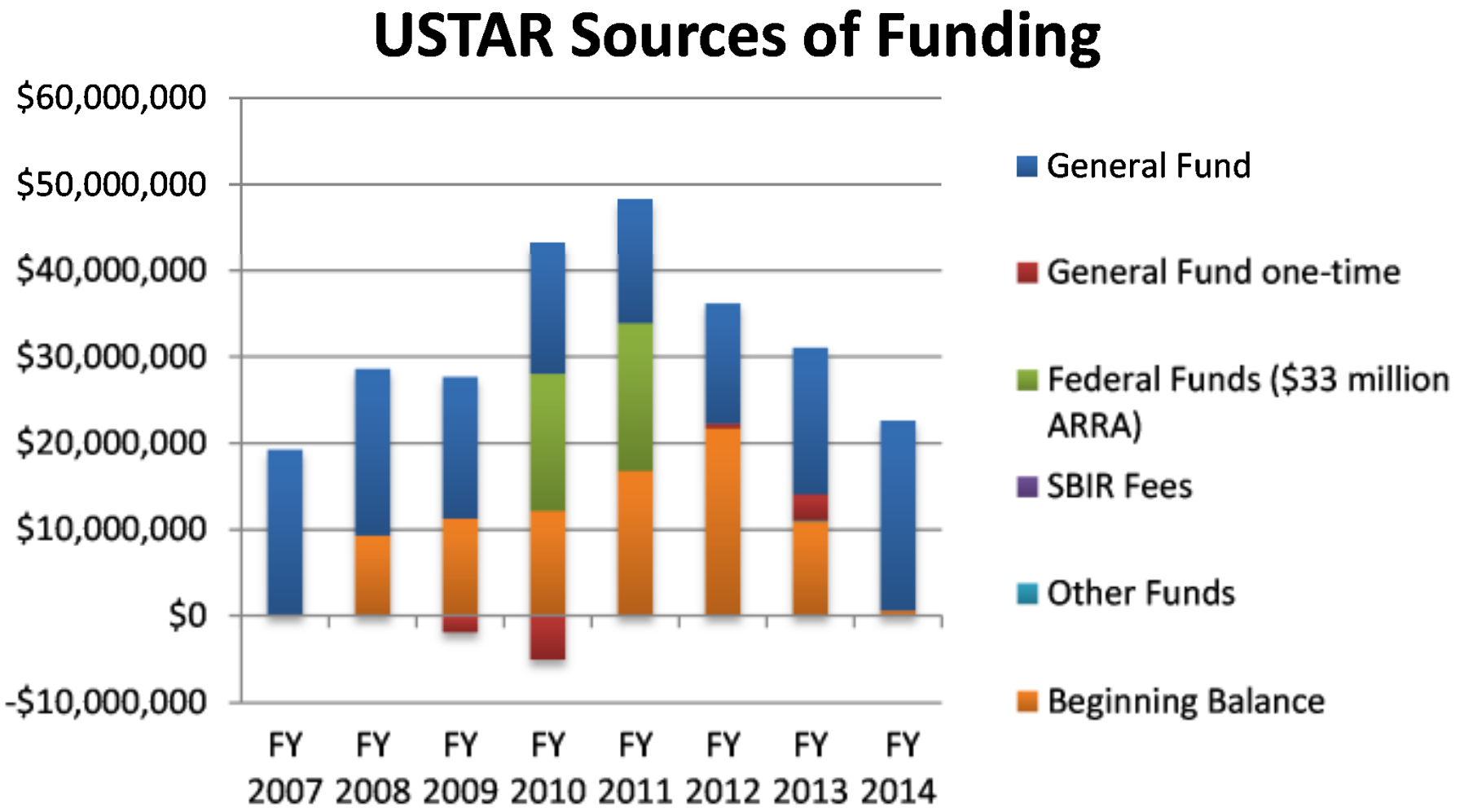
- Utah Industry Focus Areas
  - Digital Media, IT, Advanced Manufacturing

- FY13 Partial Details
  - $90k awarded to 15 companies
  - 36 jobs created, $680k external funding

USTAR Administration Metrics

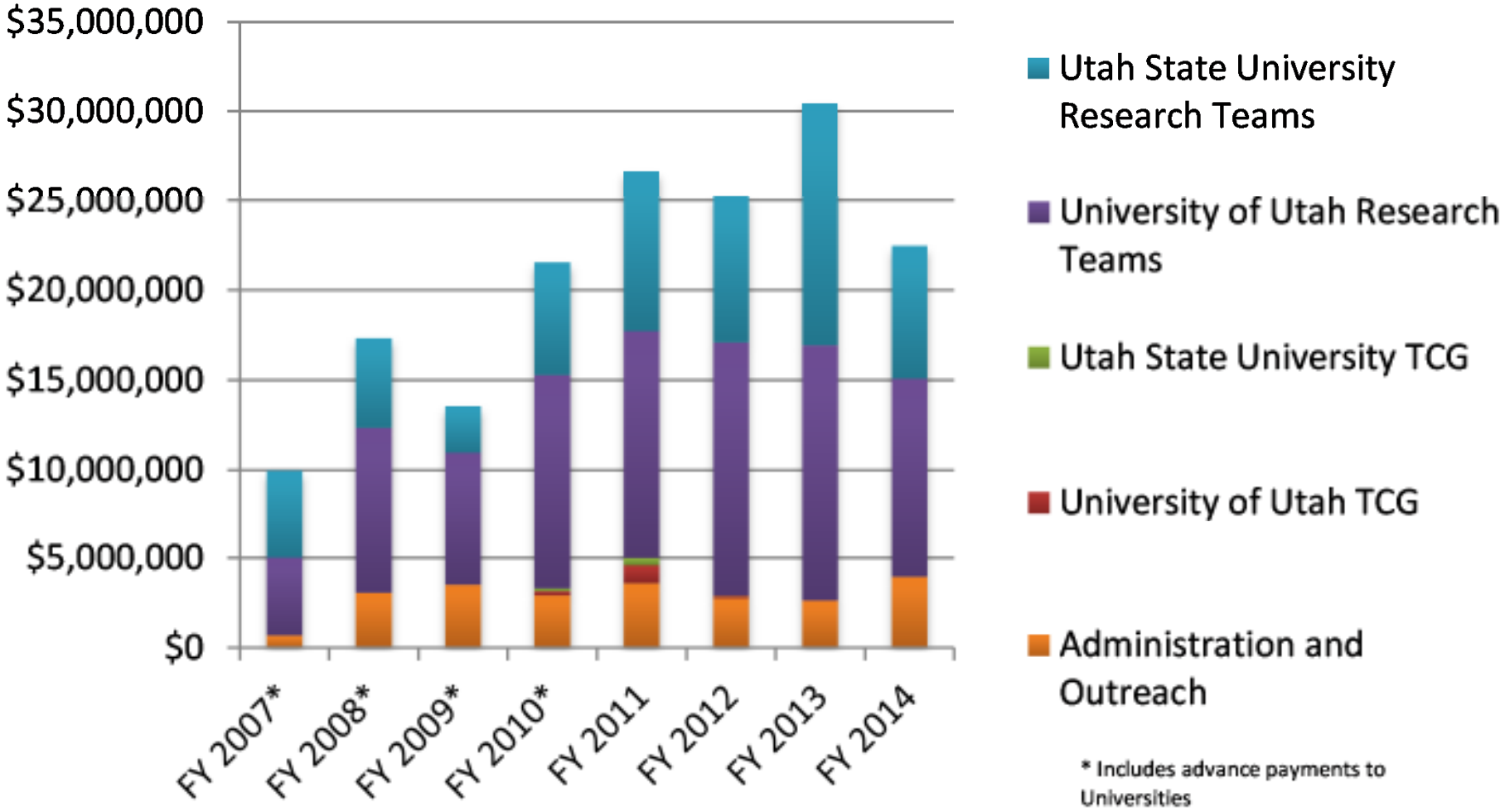


USTAR Financials



USTAR Financials (cont)

USTAR Uses of Funding



Innovation Areas:

Energy

BioDevice/ BioPharma

Medical Imaging & Brain Medicine

Nano-technology

Imaging & Digital Media

USTAR

Turning innovation into industry.

Discussion / Q and A

Key Links for additional information

USTAR: www.innovationutah.com

BIG: http://bioinnovationsgateway.org/

SBIR: http://www.innovationutah.com/sbir/

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Innovation Areas:

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THANK YOU

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- Topic 4: Appendix Details
  - Details behind the charts
  - University of Utah
  - Utah State University
  - 4 Outreach Regions
  - BioInnovations Gateway
  - SBIR / STTR Assistance Center

Innovation Areas:

Energy

BioDevice/ BioPharma

Medical Imaging & Brain Medicine

Nano-technology

Imaging & Digital Media

USTAR

Turning innovation into industry.

Appendix: Details behind the charts

Detailed Team Expenditures: U of U

University of Utah USTAR Research Teams Expenditures - By Fiscal Year								
Research Area	2007	2008	2009	2010	2011	2012	2013	Total
Startup Space/Rent/Joint Venture/Other		$4,390,805	$1,852,452	$1,685,008	$2,579,166	$5,714,713	$6,913,382	$23,135,526
Nanotechnology Biosensors		$1,874,107	$1,701,550	$1,356,388	$478,971	$442,201	$368,108	$6,221,325
Wireless Nanosystems	$3,741	$355,246	$2,080,115	$1,638,218	$958,126	$947,807	$677,610	$6,660,863
Circuits of the Brain	$16,687	$103,060	$1,088,168	$2,017,104	$776,698	$648,752	$516,025	$5,166,494
Micro Nano System Integration			$79,913	$1,730,896	$1,961,128	$664,177	$328,562	$4,764,676
Biomedical Device		$1,103,457	$665,063	$840,758	$927,586	$1,025,494	$937,261	$5,499,619
Diagnostic Imaging	$19,632	$24,427	$1,526,309	$780,153	$878,532	$1,048,839	$1,360,102	$5,637,994
Fossil Energy	$43,478	$630,228	$1,625,280	$329,265	$537,628	$998,850	$899,048	$5,063,777
Imaging Technology	$44,510	$335,681	$1,336,452	$620,294	$754,425	$1,018,135	$757,307	$4,866,804
Nanoscale and Biomedical Photonic			$17,202	$923,484	$2,063,155	$910,490	$775,081	$4,689,412
Digital Media			$14,023	$213,014	$278,863	$205,930	$348,155	$1,059,985
Bio Lab					$500,000			$500,000
Alternative Energy Center				$7,591	$30,575	$567,252	$420,478	$1,025,896
Personalized Medicine		$2,179	$4,362	$12,969	$4,387			$23,897
Cell Therapy			$2,073	$4,171	$799			$7,043
Total	$128,048	$8,819,190	$11,992,962	$12,159,313	$12,730,039	$14,192,640	$14,301,119	$74,323,311

University of Utah USTAR Researach Teams Expenditures - By Expense Type						
Research Area	Salary & Benefits	Travel	Current Expense	Equipment	Capital Outlay	Total
Startup Space/Rent/Joint Venture/Other	$1,204,515	$2,171	$11,038,778	$12,393,189	$5,359,909	$29,998,562
Nanotechnology Biosensors	$3,427,456	$105,201	$599,957	$966,043	$68,920	$5,167,577
Wireless Nanosystems	$3,880,935	$168,052	$625,545	-$169,920	$603,250	$5,107,862
Circuits of the Brain	$2,612,282	$52,182	$1,008,121	$406,806	$0	$4,079,391
Micro Nano System Integration	$1,493,473	$110,648	$750,338	$1,383,350	$1,026,868	$4,764,677
Biomedical Device	$2,903,368	$113,042	$1,112,268	$507,152	$217,607	$4,853,437
Diagnostic Imaging	$3,457,457	$414,563	$1,165,462	-$365,490	$3,000	$4,674,992
Fossil Energy	$2,810,864	$97,954	$321,743	$871,552	$61,664	$4,163,777
Imaging Technology	$3,415,685	$133,393	$460,900	$856,824		$4,866,802
Nanoscale and Biomedical Photonic	$2,078,119	$70,777	$696,740	$715,512	$468,265	$4,029,413
Digital Media	$845,160	$74,362	$140,462			$1,059,984
Bio Lab				$250,000	$250,000	$500,000
Alternative Energy Center	$590,638	$48,176	$234,283	$152,799		$1,025,896
Health Science		$21,580	$9,361			$30,941
Total	$28,719,952	$1,412,101	$18,163,958	$17,967,817	$8,059,483	$74,323,311

Detailed Team Expenditures: U of U

Utah State University USTAR Research Teams Expenditures - By Fiscal Year

Research Area	2007	2008	2009	2010	2011	2012	2013	Total
Center for Active Sensing and Imaging (CASI)	$949,552	$1,847,834	$1,868,696	$1,241,818	$1,389,282	$71,303		$7,368,485
Applied Nutrition Research (formerly CAN)	$555,122	$1,305,826	$1,640,640	$1,086,800	$939,997	$496,164	$300,462	$6,325,011
Biofuels	$348,687	$1,278,942	$1,004,129	$1,588,036	$658,982	$398,143		$5,276,919
Synthetic Bio-Manufacturing Center (SBC)			$486,898	$592,311	$1,963,410	$2,034,144	$5,339,597	$10,416,360
Intuitive Buildings (I2B)				$456,899	$934,661	$903,195	$328,405	$2,623,160
Space Weather			$81,203	$474,371	$800,427	$624,797	$337,054	$2,317,852
Building O&M		$195,322	$204,682	$200,275	$558,367	$678,416	$310,017	$2,147,079
STORM					$974,615	$325,385	$1,681,803	$2,981,803
Energy Dynamics Lab (EDL)				$393,754	$105,327			$499,081
Plasma Containment			$333,485	$124,475	$0	$42,157		$500,117
Instructional Tech/Media (IDIAS)				$192,223	$112,916			$305,139
Semiconductor Chips (Krishna Shenal)	$281,281	$23,187						$304,468
Commercialization Program					$216,235	$969,752		$1,185,987
Energy Initiative					$142,175	$336,388	$1,234,531	$1,713,094
Veterinary Diag/Infectious Disease (VDID)				$1,608	$84,473	$937,194	$1,864,615	$2,887,890
Utah Advance Transportation Inst.						$79,694	$996,706	$1,076,400
Active Sensing						$200,000	$954,374	$1,154,374
Arrhythmia Joint Venture					$59,132	$73,868	$129,823	$262,823
Programming	$1,911	$74					$35,748	$37,733
Total	$2,136,553	$4,651,185	$5,619,733	$6,352,570	$8,939,999	$8,170,600	$13,513,135	$49,383,775

Utah State University USTAR Research Teams Expenditures - By Expense Type

Research Area	Salary & Benefits	Travel	Current Expense	Equipment	USURF I.O.T.	Capital Outlay	Total
Center for Active Sensing and Imaging (CASI)	$1,420,295	$72,270	-$101,684	$685,846	$3,993,297	$1,298,461	$7,368,485
Applied Nutrition Research (formerly CAN)	$4,392,492	$105,421	$1,363,391	$96,637		$367,072	$6,325,011
Biofuels	$1,841,270	$117,899	$668,434	$492,446	$1,169,025	$987,845	$5,276,919
Synthetic Bio-Manufacturing Center (SBC)	$3,987,070	$147,340	$1,241,408	$231,902	$224,790	$2,790,237	$8,622,746
Intuitive Buildings (I2B)	$42,357	$1,571	$42,181		$2,537,053		$2,623,161
Space Weather	$1,773,530	$78,577	$371,086	$800		$93,859	$2,317,852
Building O&M			$2,147,078				$2,147,078
STORM	$518,522	$19,358	$272,105		$2,136,137	$35,681	$2,981,803
Energy Dynamics Lab (EDL)					$499,081		$499,081
Plasma Containment	$390,394	$4,218	$105,505				$500,117
Instructional Tech/Media (IDIAS)	$261,692	$26,515	$6,879	$10,054			$305,139
Semiconductor Chips (Krishna Shenal)	$266,621	$20,577	$17,270				$304,468
Commercialization Program	$113,471	$8,621	$114,805		$949,090		$1,185,987
Energy Initiative	$519,596	$13,407	$115,642		$1,012,223	$52,226	$1,713,094
Veterinary Diag/Infectious Disease (VDID)	$1,585,829	$62,644	$537,144	$91,096	$141,972	$281,639	$2,700,324
Utah Advance Transportation Inst.	$229,735	$3,081	$179,013		$283,803	$380,767	$1,076,400
Active Sensing	$30,739		$623,635				$654,374
Arrhythmia Joint Venture			$69,649	$16,351		$176,823	$262,823
EPSCOR	$87,032	$1,794	$3,526				$92,353
Programming		$74	$1,911				$1,985
Total	$17,460,646	$683,366	$7,778,978	$1,625,131	$12,946,470	$6,464,610	$46,959,201 [1]

Note 1: Difference of $2,424,574 is due to encumbrances

Summary Details

Performance of Administration	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Website Hits (monthly average)*	3,300	4,612	5,376	5,847	4,178
Accounts in Salesforce.com	2,137	2,622	2,812	5,485	6,511
Media stories mentioning USTAR	35	72	130	478	544

* Transition to new website hosting in FY13 - missing web analytics 1/3 year

Performance of Technology Outreach	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
New companies launched (assisted by Tech Outreach)**	6	0	15	15	3
Federal grants won by Utah Companies (assisted by SBIR)	$1,000,000	$159,408	$1,897,890	$1,527,464	$1,839,028
Private equity investment (assisted by Tech Outreach)	$5,680,000	$2,060,000	$7,630,000	$4,920,000	$10,660,000

** Estimate

Performance of Research Teams	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Researchers hired and in place	28	36	44	48	50
External research grants awarded	$16,501,459	$20,628,343	$28,476,734	$29,543,144	$21,627,289
Disclosures submitted	42	34	35	99	61
Patents filled	7	24	39	62	53
Companies started/brought to Utah	3	1	0	1	0

Sources and Uses of Funding

USTAR Sources and Uses of Funding

	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Authorized
Sources of Funding	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
General Fund	$19,250,000	$19,324,500	$16,397,800	$15,296,100	$14,501,300	$13,952,700	$16,990,300	$22,014,000
General Fund one-time			-$1,947,700	-$5,072,900		$540,500	$3,000,000	
Federal Funds ($33 million ARRA)				$15,884,351	$17,115,649			
SBIR Fees			$6,315	$9,600	$4,750	$3,107	$7,329	$5,200
Other Funds							$128,146	
Beginning Balance		$9,286,195	$11,269,702	$12,164,979	$16,744,864	$21,701,984	$10,923,719	$602,645
Ending Balance	-$9,286,195	-$11,269,702	-$12,164,979	-$16,744,864	-$21,701,984	-$10,923,719	-$602,645	-$114,325
Total Sources	$9,963,805	$17,340,993	$13,561,138	$21,537,266	$26,664,579	$25,274,572	$30,446,849	$22,507,520
Uses of Funding	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Administration and Outreach	$672,157	$3,056,114	$3,507,632	$2,901,017	$3,595,832	$2,756,748	$2,604,882	$3,958,620 [1]
University of Utah TCG				$247,847	$978,204	$131,189	$27,711	
Utah State University TCG				$158,876	$420,506	$23,396		
University of Utah Research Teams	$128,047	$8,819,190	$11,992,963	$12,159,312	$12,730,038	$14,192,639	$14,301,121	$11,111,300
Utah State University Research Teams	$2,136,552	$4,651,186	$5,619,733	$6,352,571	$8,939,999	$8,170,600	$13,513,135	$7,407,600
U of U and USU Advance Payments	$7,027,049	$814,503	-$7,559,195	-$282,357				
Total Uses	$9,963,805	$17,340,993	$13,561,133	$21,537,266	$26,664,579	$25,274,572	$30,446,849	$22,477,520

Note 1: Non-lapsing funding Includes $500,000 in Admin and Outreach for Strategic Initiatives in TOIP or Research (with Legisative approrpation)

Innovation Areas:

Energy

BioDevice/ BioPharma

Medical Imaging & Brain Medicine

Nano-technology

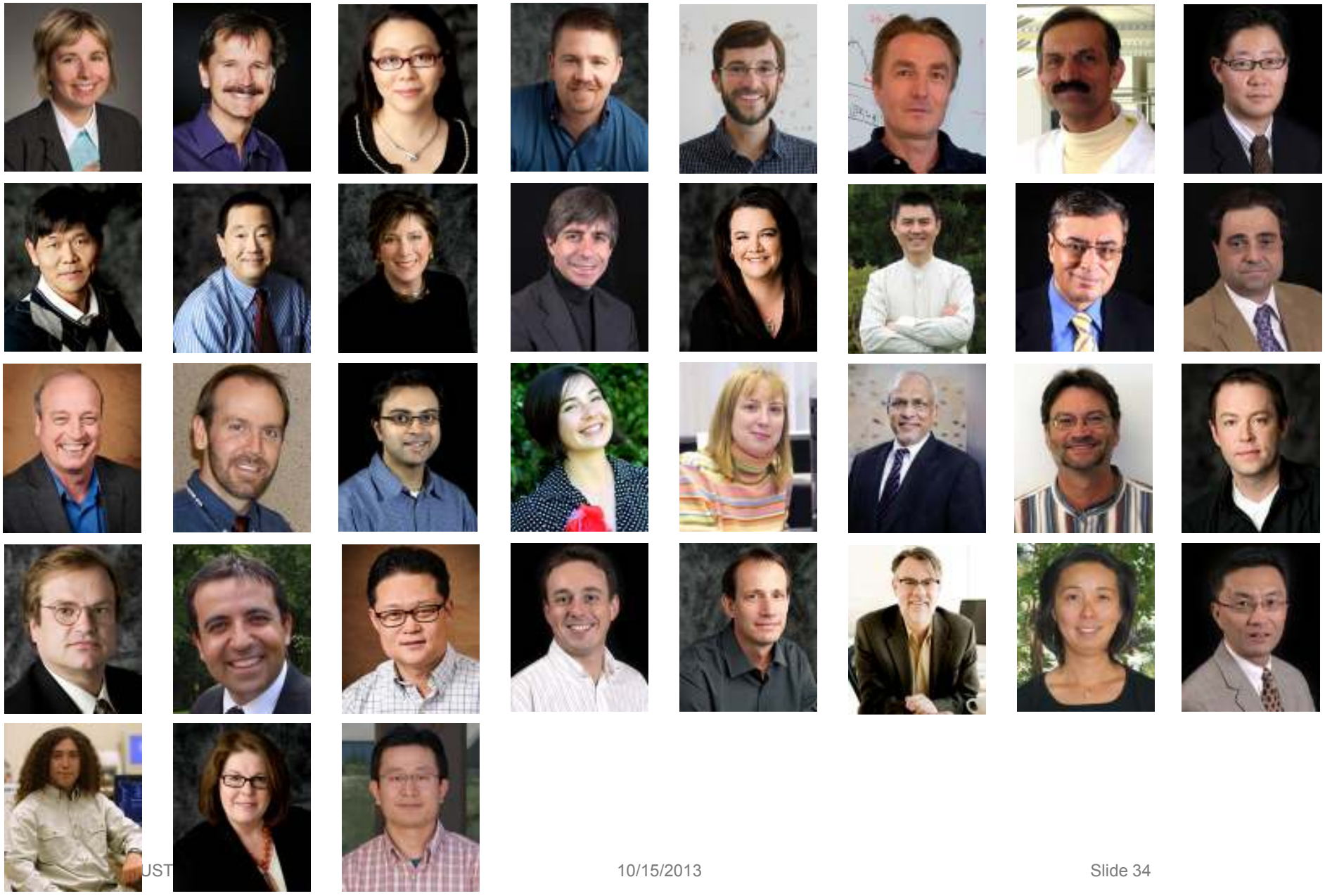
Imaging & Digital Media

USTAR

Turning innovation into industry.

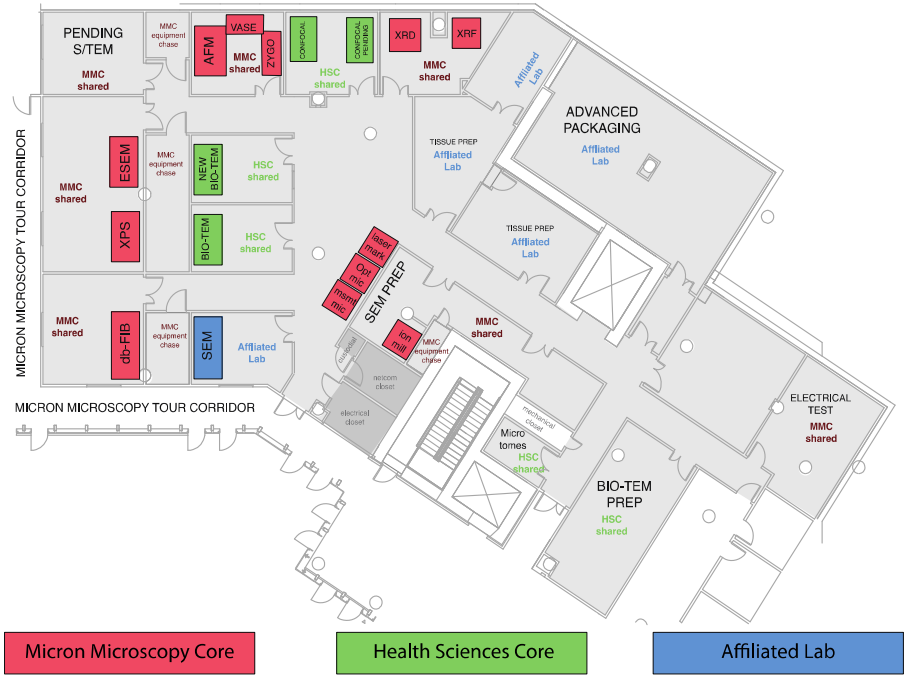
Appendix: Program 1 and 2 Details at U of U

Program 1: 35 USTAR Faculty are Catalysts for their Innovation Areas



Program 1: USTAR Faculty Sample Recruiting Locations

Program 2 at U of U: James L. Sorenson Molecular Biotechnology Building _A USTAR Innovation Center



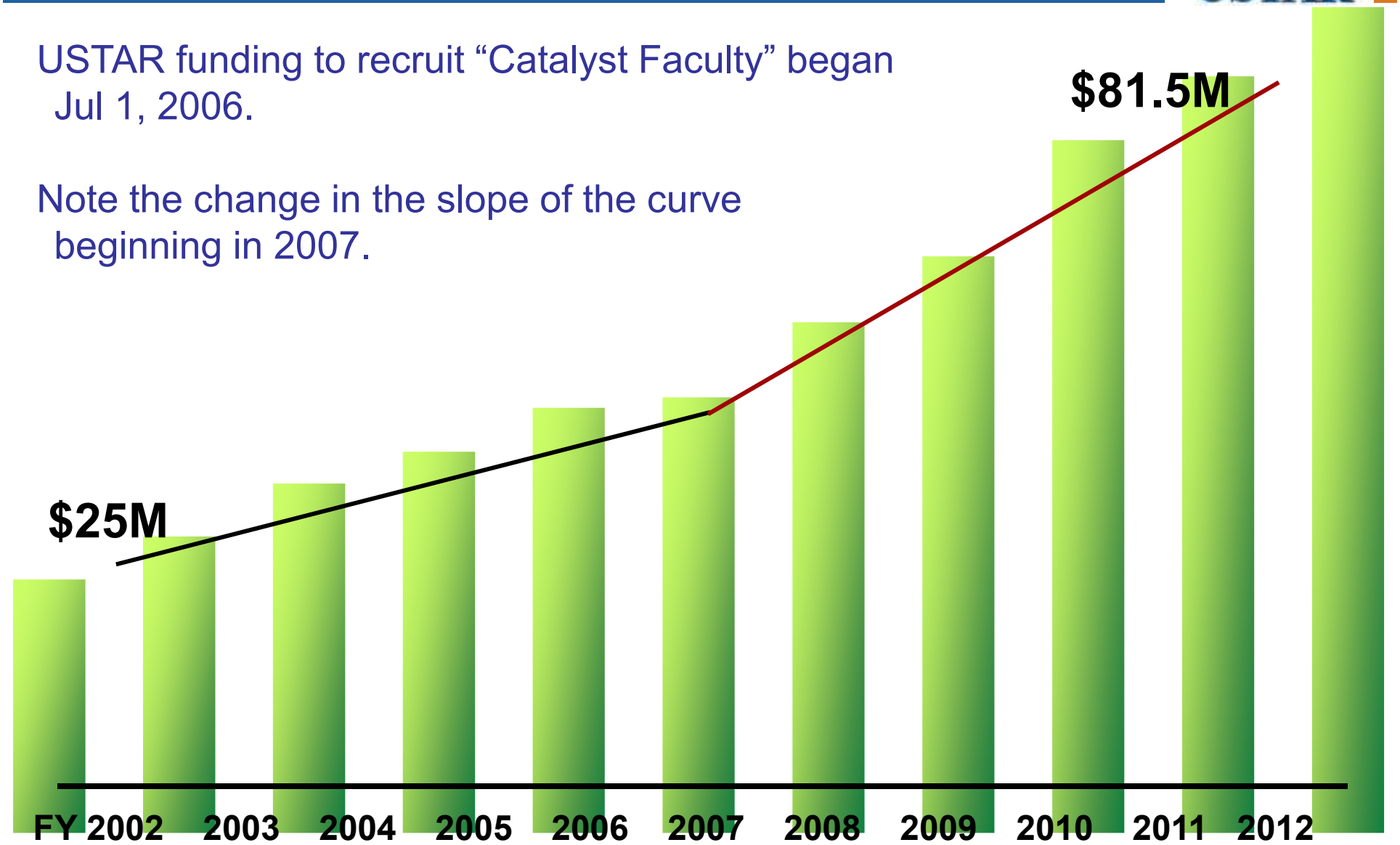
State of the art elements in this LEED Gold certified 208,000 sf facility

- **18,000 sf Nanofabrication core**
- **5,300 sf Microscopy suite**
- **Small-animal imaging facility**
- **4 floors of Research Labs**

University of Utay College of Engineering is Growing

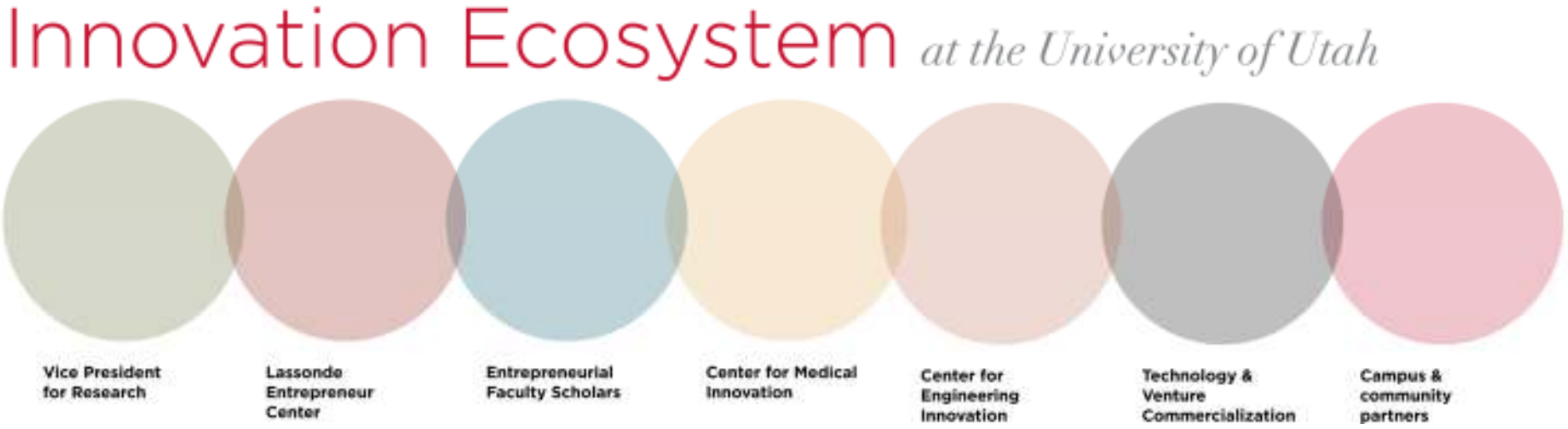
USTAR funding to recruit “Catalyst Faculty” began Jul 1, 2006.

Note the change in the slope of the curve beginning in 2007.



ASEE Data

U of U Innovation EcoSystem in 2013



- **Vice President for Research: USTAR's strategic innovation areas are catalysts for interdisciplinary collaboration**
- **Lassonde Entrepreneur Center: home base for student programs**
- **Entrepreneurial Faculty Scholars: dedicated to translational R&D experience**
- **Center for Medical Innovation: one-stop-shop for medical doctors interested in innovation**
- **Center for Engineering Innovation: anchored by the NanoFab Lab in the USTAR Bldg**
- **Technology and Venture Commercialization: managing Intellectual Property and facilitating industry partnerships**
- **Campus and Community Partners: USTAR**

Innovation Areas:

Energy

BioDevice/ BioPharma

Medical Imaging & Brain Medicine

Nano-technology

Imaging & Digital Media

USTAR

Turning innovation into industry.

Appendix: Program 1 and 2 details at USU

Program 1: Summary of USTAR Teams at USU

See http://ustar.usu.edu/htm/research/ustar-teams/ for details

- Center for Human Nutrition Studies:
- Space Weather Center:
- STORM: (Sounding & Tracking Observatory for Regional Meteorology)
- Wireless Power Transfer:
- Veterinary Diagnostics and Infectious Diseases:
- Utah Multidisciplinary Arrhythmia Consortium:
- Synthetic Biomanufacturing Institute: with 4 areas of emphasis
  - -Sustainable Waste-to-Bioproducts Engineering Center:
  - -Synthetic Bioproducts Center:
  - -BioEnergy Center:
  - -Bioproducts Production Laboratory:

Program 2: USU Facilities and Infrastructure

USU USTAR Core Facilities

- **Clinical nutrition center**
- **Bio Safety Level 3**
- **Specialized Life science labs**
- **LEED Gold Certified for sustainable design**

USU BEERC and USU CEIC:

Rural Service Centers (primarily private investment)

USU USTAR Projects are relevant: Aligned w Key Utah issues

- Air Quality and Transportation: USTAR Advanced Transportation Institute (UATI) and WAVE (Electric bus w UTA)
- Education: Experiential learning at regional incubators, BioInnovations Gateway is training 10-12th graders
- Energy and Natural Resources: Clean Coke Project in Price, Occutel (energy efficiency), Potash in Moab
- Healthcare: Araknitek (ligaments); VDID
- Homeland Defense and Security: STORM (Sensors),

Innovation Areas:

Energy

BioDevice/ BioPharma

Medical Imaging & Brain Medicine

Nano-technology

Imaging & Digital Media

USTAR

Turning innovation into industry.

Appendix: Program 3 Outreach

Program 3 Details: USTAR Directors

Alex Lawrence
Northern Utah

Al Walker
Eastern Utah

Jill Elliss
Southern Utah

Steve Roy
Central Utah

USTAR Outreach: Northern Utah

WEBER STATE UNIVERSITY

UCAID

MINION

CHAR POLES

Vortecx

FENIX

ENVE Composites

WEBERSTATE COAST

BreathAdvisor

USTAR Outreach: Central Utah

Sales Lab

USTAR Outreach: Southern Utah

Mission: Promote Creation and Growth of Gazelle companies*

* Gazelles: potential high growth, innovation-centered, higher wages, customers outside region

Company	Description	Our involvement	Their Impact
XTIRI	Software to transform and manage paper	C2C award, Incubator tenant	Adding sales, Jobs, nationwide presence in energy & transport
RxTRAX	Mobile app and web interface solves delivery and HIPAA problems for independent pharmacies.	GTM Grant, C2C winner	Adding sales, jobs clients nationwide,

IDT SERVICES

dixietechs BRILLIANCE UNITED

seeddixie

Startup Weekend Cedar City

QUANTUM INGENUITIES

concept to company Expanding Southern Utah's Tech Industry

TECHUP SOUTHERN UTAH

TouchMD

USTAR Outreach: Eastern Utah

Utah's Waxy Crude Economic Assessment

Figure 6: Estimated Production Gap Due to Transportation Constraints

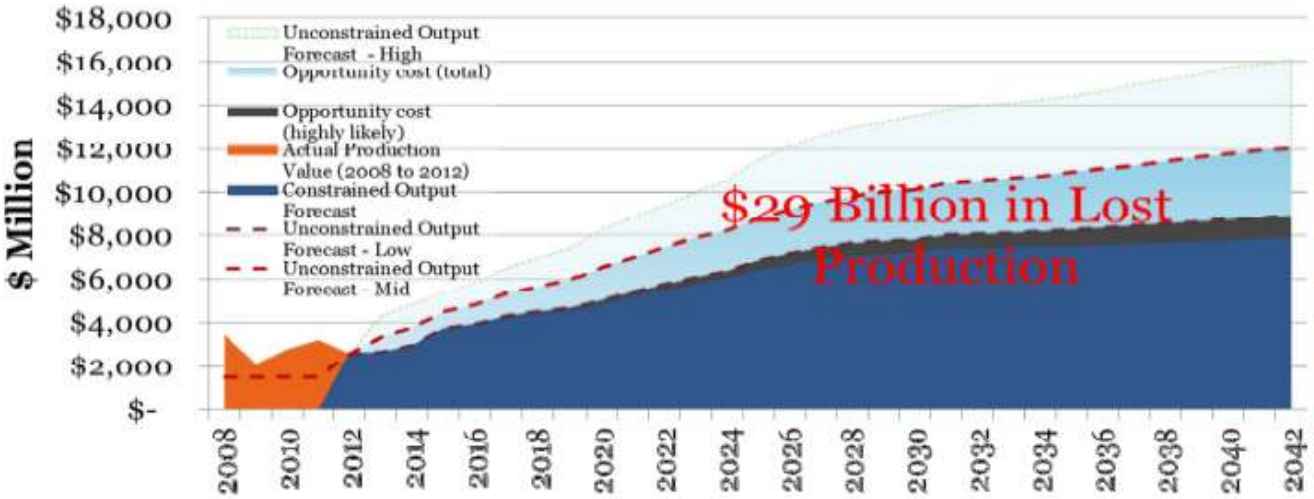


Table 3: The Opportunity Cost of Constrained Oil and Gas Transportation Capacity in the Uinta Basin, Present Value[a] (over 30 Years)

Revenues and User Cost Savings ($ Million)		Environmental and Social Costs ($Million)		Macroeconomic Impact	
Profit, rents, dividends, and private royalties[b]	$3,784	Site emissions and ecological impacts	($1,246)	Total regional output, $ Million	$34,794
State and local tax revenue	$2,756	Vehicle emissions	($24)	Total labor income, $ Million	$11,791
User cost savings	$4,943	Safety impacts	($101)	Long-term jobs[c]	26,802
Total	**$11,483**	**Total**	**($1,371)**		

SBIR/STTR Assistance Program

Regional Impact Slide since inception:

SSAC Client Wins: 2013 = $1,539,250; 5 Year Total = $7,272,049

USTAR - SBIR-STTR ASSISTANCE CENTER - GRANTS WON - THROUGH JUNE 2013					
COMPANY NAME	Award Type	AGENCY	DEPT.	Award $	Award Mo/Yr
Jade Therapeutics	SBIR Phase I	Dept. of Health & Human Services	Army	$100,000	Sept-13
Veristride	SBIR Phase II			$748,259	Sept-13
Jade Therapeutics	SBIR Phase I	National Science Foundation		$149,778	June-13
Enclavix	SBIR Phase I	National Science Foundation		$150,000	June-13
FluidTracer	STTR Phase I	Department of Energy	Science	$150,000	April-13
Silicon Technologies	SBIR Phase I	Department of Defense	Air Force	$150,000	May-13
Vaporsens	SBIR Phase I	National Science Foundation	-	$150,000	December-12
Box Elder Innovations, LLC	STTR Phase I	Department of Defense	Air Force	$749,508	December-12
Navillum Nanotechnologies	SBIR Phase I	National Science Foundation	-	$150,000	December-12
Thermimage, Inc.	SBIR Phase I	Dept. of Health & Human Services	NIH	$189,742	July-12
JSK Therapeutics	SBIR Phase II	Dept. of Health & Human Services	-	$927,566	April-12
Box Elder Innovations, LLC	STTR Phase I	Department of Defense	Air Force	$99,898	January-12
Heavystone Laboratory, LLC	SBIR Phase II	National Science Foundation	-	$500,000	September-11
Aribex	SBIR Phase II	NASA	-	$600,000	May-11
MetalloSensors, Inc.	SBIR Phase I	National Science Foundation	-	$150,000	May-11
Enclavix	SBIR Phase I	National Science Foundation	-	$149,672	March-11
LiveWire	SBIR Phase II	Department of Defense	Air Force	$749,895	December-10
Silicon Technologies	SBIR Phase I	Department of Defense	DARPA	$148,823	September-10
JSK Therapeutics	SBIR Phase I	Dept. of Health & Human Services	-	$99,500	September-10
Wind Lift Technologies	SBIR Phase I	Department of Agriculture	-	$89,408	April-10
Aribex	SBIR Phase I	NASA	-	$70,000	September-09
New Path Research	SBIR Phase II	Dept. of Health & Human Services	-	$1,000,000	September-08
TOTAL			**22 AWARDS**	**$7,272,049**	

SBIR/STTR Assistance Program

Regional Impact Slide since inception:

Outreach: 70 outreach presentations delivered in 8 different Utah counties

Clients: 85 active clients in 8 different Utah counties

Completed Submissions: 24 clients received soup-to-nuts assistance

Assists: 38 clients received detailed assistance

Wins: 20 awards

BioInnovations Gateway

BioInnovations
GATEWAY
Growing Talent...Growing Business

2500 South State St
Salt Lake City, UT 84115
smarland@utah.gov

USTAR
Turning innovation into industry.

BiG Facilities

BiG Incubation Clients:

Medical Device

- **Veristride–** Instrumented insoles for real-time rehabilitation
- **Zein Medical** – device design helping companies realize products
- **EZ-lift**– rescue system to reduce back injuries in rescuers
- **Bend Labs** – flexible wearable sensors

Diagnostics

- **Knudra –** developing assay kits that detect toxicity more accurately and efficiently
- **uBiota**– Direct to consumer bacterial analysis of the lower digestive tract

Therapeutics

- **Mesagen**– Protein based therapeutics

Other (Enabling technologies / Combination)

- **Navillum Nanotechnologies** – Quantum dots
- **Ex-Vivo Biomedical** – rapid removal of macromolecules from blood
- **Hamertech** – machining and tool making
- **BioUtah**– Utah's life science industry association

Non-Residents…in 2013, 23 Life Science companies utilized the incubator

UPDATE BioInnovations Gateway Summary

In FY 2013 alone, 23 life science utilized the incubator

Summary impact in FY13:

- Supported >28 jobs
  - First BiG graduate, BloXR, has raised $12 Million and now has over 30 FTEs

- Employed and trained 24 HS student interns, 2 undergraduates and 5 graduate students

- Company participation in FY13 includes: Arion, Control Medical, DermaPen, Distal Access, DxNA, EZ Lift Rescue Systems, Ex-vivo Bio, Knudra, MesaGen, Navigen, Navillum, SimplicityMD Symbion, Turner Labs, Veristride, Veritract, VioGen, VMI Nutrition, uBiota, Waters Corporation, Watson Pharmaceuticals, Zien, BioUtah,

Innovation Areas:

Energy

BioDevice/ BioPharma

Medical Imaging & Brain Medicine

Nano-technology

Imaging & Digital Media

USTAR

Turning innovation into industry.

Appendix:
National Recognition
Why Innovation is important to Utah
Measurement Framework

National Recognition:

WINNER: 2013 State Science and Technology Institute's (SSTI) Excellence in Technology Based Economic Development *Category: Expanding the Research Capacity*

"Since its inception in 2006, USTAR has enhanced Utah's research capacity by skillfully connecting private, public and higher education assets in the state. Through USTAR's efforts, the state has recruited numerous world-class researchers, increased R&D funding attraction and spurred economic growth."

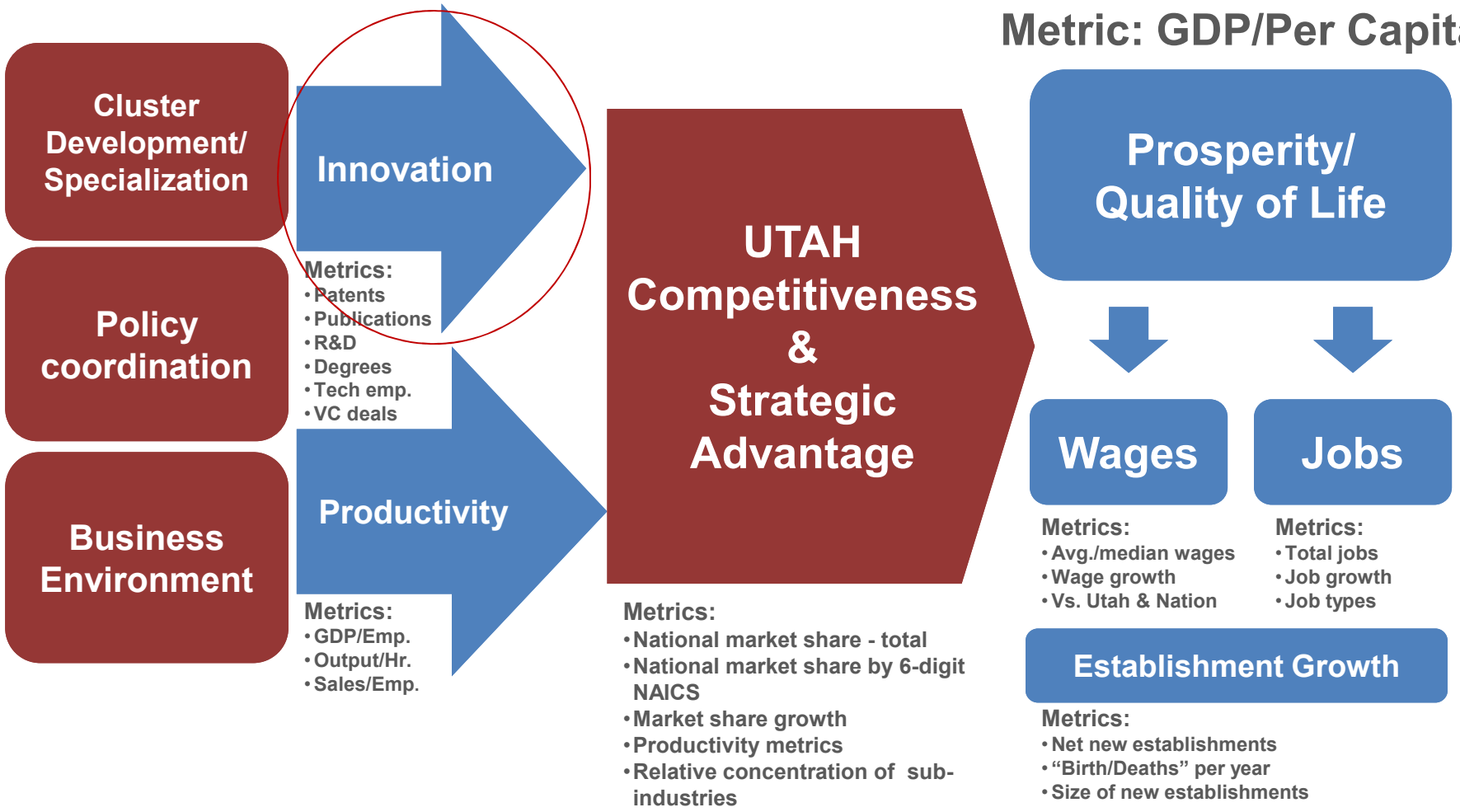
- Dan Berglund, SSTI president & CEO

National Recognition (cont)

- National Governor's Association: USTAR was featured in "*2012 Growing State Economies Policy Framework Best Practices Guide*
- Brookings Institute: *"USTAR has rapidly emerged as not just the state's primary innovation driver, but as a national best practice…"*
- Nevada's Knowledge Fund and Idaho's iGEM: Cited USTAR as a model in 2011 and 2012 enabling legislation respectively

Context: Why Innovate?

A crucial way to sustain a State's long term competitive advantage is to drive prosperity and quality of life through continuous innovation and productivity improvements



Source: 3 Copyright 2011 © Professor Michael E. Porter 20110602 – Michigan State Competitiveness – Rich Bryden

Defining Innovation: Why Innovate?

- **What types of Innovation will come from the State of Utah's strategic investments in USTAR?**

Creativity

Different

Invention

Technical Creativity

INNOVATION is

MEANINGFUL UNIQUENESS

3 Types of Innovation

Clayton Christenson defines 3 Types

“Empowering”

- Complicated costly products transformed to simpler cheaper products available for many
- **Creates jobs and uses capital**

“Sustaining”

- Replace old products with new models
- Create few jobs and neutral effect on economic activity and capital

“Efficiency”

- Reduce the cost of making and distributing existing products and services
- Industry wide it cuts jobs but preserves many of remaining jobs by keeping companies efficient

McKinsey Study and Implications on Innovation in Utah

- USTAR is the State of Utah's strategic innovation capacity building program. When we think of Utah's Objective 1 and Objective 3, we tend to think of Clusters, as a way to organize. However, when we think of Objective 2, *Increase Innovation, Investment and Entrepreneurship,* and we zero in on Innovation, it is best to think of the 12 potentially Disruptive Technologies of 2025

- *Disruptive technologies: Advances that will transform life, business, and the global economy*, a report from the McKinsey Global Institute (MGI)…identifies 12 technologies that could drive truly massive economic transformations and disruptions in the coming years. The report also looks at exactly how these technologies could change our world, as well as their benefits and challenges…

- MGI estimates that, together, applications of the 12 technologies discussed in the report could have a potential economic impact between $14 trillion and $33 trillion a year in 2025. This estimate is neither predictive nor comprehensive. It is based on an in-depth analysis of key potential applications and the value they could create in a number of ways, including the consumer surplus that arises from better products, lower prices, a cleaner environment, and better health.

- Source: http://www.mckinsey.com/insights/business_technology/disruptive_technologies

McKinsey Study and Innovation in Utah (cont)

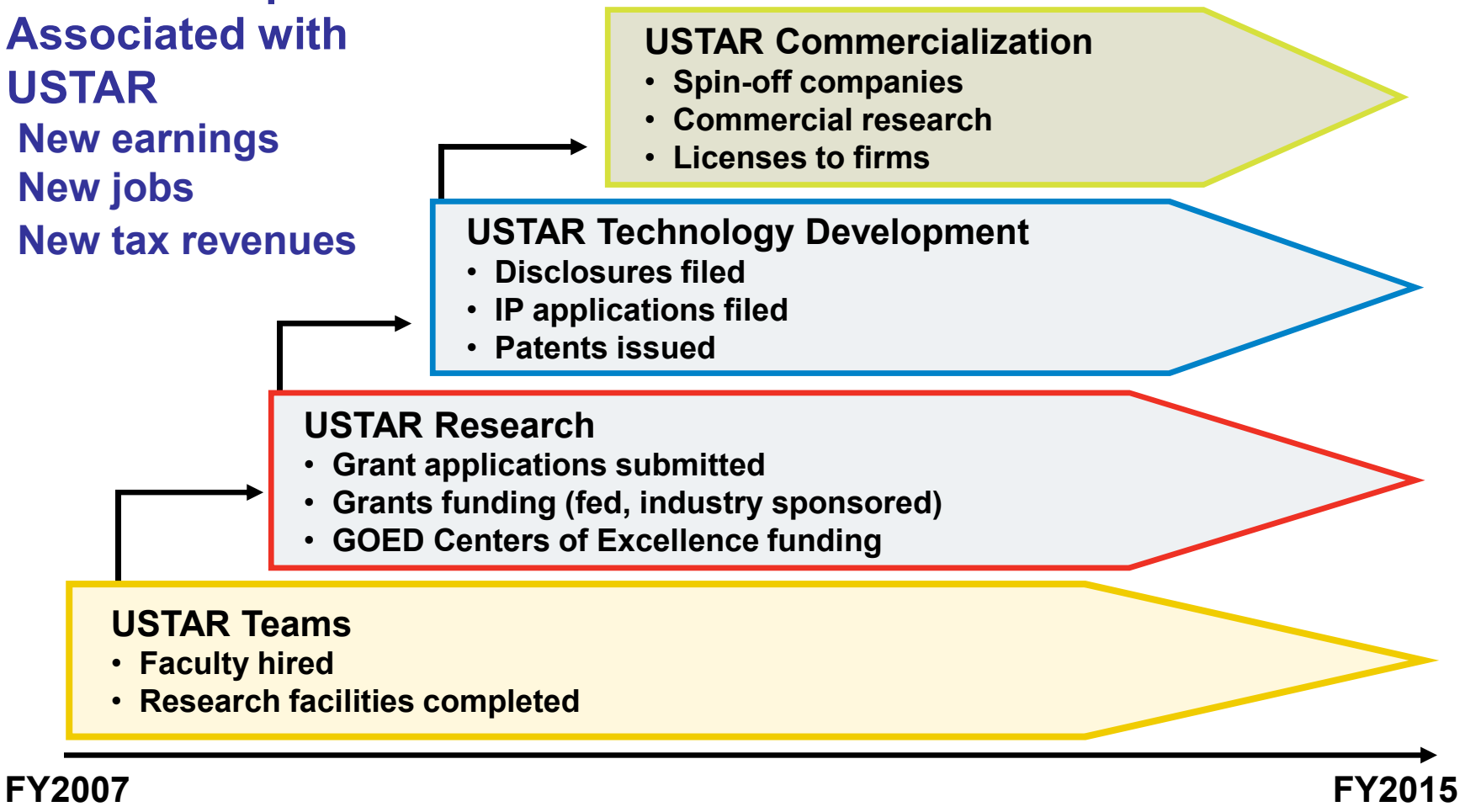
12 Technology Categories: where can the State of Utah develop and unique competitive advantage?

- Mobile Internet
- Automation of Knowledge Work
- Internet of Thngs
- Cloud
- Advanced robotics
- Autonomous and Near Autonomous Vehicles
- Next-generation genomics
- Energy
- 3D Printing
- Advanced Materials
- Advanced oil and gas exploration
- Renewable Energy

Framework for Implementation & Measurement: USTAR

Economic Impact Associated with USTAR

- New earnings
- New jobs
- New tax revenues



USTAR Strategic Phases (summary)

Build a strong foundation phase

- Recruited 1st 40 USTAR PIs
- Programmed, Designed and Built USTAR Buildings at U of U and USU
- Developed 5 Regionally relevant TOIP Programs
- Implemented a gap funding program called Technology Commercialization Grants using ARRA funds
- Launched SBIR and BioInnovations Gateway as TOIP resources
- Launched the USTAR emphasis on Lean Startup

Iterate and Validate the model phase:

- Recruited next 10 USTAR PI's and established affiliates at USU
- Moved into USTAR buildings
- Launched incubators at UVU and Dixie. Validated BiG model. Programmed Startup Ogden
- Introduced GTM as a Proof of Relevance funding milestone

Accelerate the returns

- Use GOMB TOC plan for FY14 to identify Objective 2 constraints
- Revise Metric tracking to incorporate national best practices
- Adapt Weber State's UCAID to match the industry needs of two strategic clusters
- Tighten partnership w Fund of Funds to accelerate use of private capital for USTAR projects
- Tighten handoffs between CEI (CMI, Lassonde, TVD), and BiG to accelerate Life Sciences innovation